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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/810,186 | 03/19/2001 | Chieko Ohsumi | 204934US0 | 6978 |

22850 7590 09/22/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

COLLINS, CYNTHIA E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1638

DATE MAILED: 09/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/810,186 | OHSUMI ET AL. | |
| | Examiner | Art Unit | |
| | Cynthia Collins | 1638 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

The Amendment After Final Rejection filed August 6, 2003, has been entered.

Claims 1-7 are cancelled.

Claims 13 and 23 are currently amended.

Claims 8-27 are pending and are examined.

The finality of the office action mailed April 8, 2003, is withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

All previous objections and rejections not set forth below have been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8-27 are rejected under 35 U.S.C. 102(a) as being anticipated by EP 0 994 186 A1 (AJINOMOTO CO. INC., 19.04.2000).

The claims are drawn to methods of increasing drought resistance and resistance to high salt concentration of a plant by transforming a plant with a polynucleotide encoding a protein having raffinose synthase activity, including a polynucleotide of SEQ ID NO:2 or a polynucleotide encoding a protein of SEQ ID NO:1.

EP 0 994 186 A1 teaches a gene encoding a protein having raffinose synthase activity, including the raffinose synthetase gene that is a polynucleotide of SEQ ID NO:2 encoding a protein of SEQ ID NO:1, and plants transformed with a gene encoding a protein having raffinose synthase activity (page 2 lines 47-48; page 3 lines 31-34; page 5 lines 8-13; page 7 lines 23-56; page 12 line 41 through page 14 line 5; pages 33-36 SEQ ID NO:23). While the claims also recite that the polynucleotide expresses the protein in an amount sufficient to increase the drought resistance or the resistance to high salt concentration, neither the claims nor the specification indicate what a “sufficient amount” is, so it is presumed that any expression of any polynucleotide encoding any protein having raffinose synthase activity would produce an amount sufficient to increase the drought resistance or the resistance to high salt concentration. Accordingly, although EP 0 994 186 A1 does not explicitly teach that the disclosed method increases drought resistance and resistance to high salt concentration of a plant, the plants produced by the disclosed method would inherently have increased drought resistance and resistance to high salt concentration, as EP 0 994 186 A1 teaches a gene encoding a protein having raffinose synthase activity, including a raffinose synthetase gene that is a polynucleotide of SEQ ID NO:2 encoding a protein of SEQ ID NO:1, and plants transformed with a polynucleotide encoding a protein having raffinose synthase activity.

Claims 8-11 and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 849 359 A2 (SUMITOMO CHEMICAL CO, 24.06.1998).

The claims are drawn to methods of increasing drought resistance and resistance to high salt concentration of a plant by transforming a plant with a polynucleotide encoding a protein having raffinose synthase activity.

EP 0 849 359 A2 teaches a method of transforming a *Brassica juncea* plant and a soybean plant with a polynucleotide encoding a protein having raffinose synthase activity (Example 13 pages 18-19; Example 14 pages 19-20). While the claims also recite that the polynucleotide expresses the protein in an amount sufficient to increase the drought resistance or the resistance to high salt concentration, neither the claims nor the specification indicate what a “sufficient amount” is, so it is presumed that any expression of any polynucleotide encoding any protein having raffinose synthase activity would produce an amount sufficient to increase the drought resistance or the resistance to high salt concentration. Accordingly, although EP 0 849 359 A2 does not explicitly teach that the disclosed method increases drought resistance and resistance to high salt concentration of a plant, the method taught by EP 0 849 359 A2 would inherently result in the production of plants having increased drought resistance and resistance to high salt concentration, as EP 0 849 359 A2 teaches a method of transforming a plant with a polynucleotide encoding a protein having raffinose synthase activity wherein expression of the polynucleotide is under the control of a promoter that is functional in plants.

Claims 8-27 are rejected under 35 U.S.C. 102(b) as being anticipated by JP411123080-A (AJINOMOTO CO. INC., May 11, 1999).

The claims are drawn to methods of increasing drought resistance and resistance to high salt concentration of a plant by transforming a plant with a polynucleotide encoding a protein

having raffinose synthase activity, including a polynucleotide of SEQ ID NO:2 or a polynucleotide encoding a protein of SEQ ID NO:1.

JP411123080-A teaches a gene encoding a protein having raffinose synthase activity, including the raffinose synthetase gene that is a polynucleotide of SEQ ID NO:2 encoding a protein of SEQ ID NO:1, and plants transformed with a gene encoding a protein having raffinose synthase activity (Title and abstract; see also attached sequence alignment between SEQ ID NO:2 and Geneseq Accession No. AAX61239, 29 July 1999). While the claims also recite that the polynucleotide expresses the protein in an amount sufficient to increase the drought resistance or the resistance to high salt concentration, neither the claims nor the specification indicate what a “sufficient amount” is, so it is presumed that any expression of any polynucleotide encoding any protein having raffinose synthase activity would produce an amount sufficient to increase the drought resistance or the resistance to high salt concentration. Accordingly, although JP411123080-A does not explicitly teach that the disclosed method increases drought resistance and resistance to high salt concentration of a plant, the plants produced by the disclosed method would inherently have increased drought resistance and resistance to high salt concentration, as JP411123080-A teaches a gene encoding a protein having raffinose synthase activity, including a raffinose synthetase gene that is a polynucleotide of SEQ ID NO:2 encoding a protein of SEQ ID NO:1, and plants transformed with a polynucleotide encoding a protein having raffinose synthase activity.

Remarks

No claim is allowed.

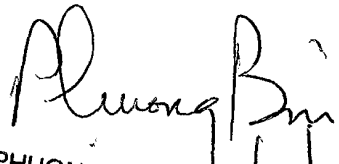
Art Unit: 1638

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (703) 605-1210. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (703) 306-3218. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

CC


PHUONG T. BUI
PRIMARY EXAMINER 9/13/03